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31 March-13 April	**Regional Training Course on Rabies, Caracas**
8-13 April	**Study Group on Epidemiology, Geneva**
8-15 April	**Expert Committee on Yellow Fever Vaccine, Geneva**
25 April-3 May	**Seminar on Mental Health of the Sub-Normal Child, Oslo**
7 May-24 May*	**Tenth World Health Assembly, Geneva**
27-31 May*	**Twentieth Session of the Executive Board, Geneva**
2-7 June	**FAO/WHO Expert Committee on Food Additives, Geneva**
12-15 June	**Sub-Committee on Non-Proprietary Names of the Expert Committee on the International Pharmacopoeia, Geneva**
24-28 June	**Study Group on Histological definitions of cancer types, Oslo**

* Termination dates are tentative

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HYGIENE AND PUBLIC HEALTH TEACHING IN EUROPE

" Medical training institutions, like all others, must improve and adapt themselves to the continual advances in both medicine and social welfare, advances which have been particularly remarkable during the last half century ". These, the opening words of Professor Jacques Parisot's introduction to a recently-published WHO monograph entitled *The Teaching of Hygiene and Public Health in Europe*, give the broad terms of reference for this study. The changes which have come about in undergraduate and post-graduate training in hygiene and preventive medicine were brought into prominence at two WHO Study Conferences held in December 1952 at Nancy in France, and in July 1953 at Göteborg in Sweden, and the authors, Professors F. Grundy and J. M. Mackintosh, have drawn freely on the material furnished by these two conferences. They have also taken the opportunities afforded by WHO to visit various European countries and there to discuss problems with their colleagues. In order to make this study as internationally significant as possible it was submitted in manuscript for comment to leading public health educators in eight countries representative of different patterns of medical education.

Public health in history

The monograph opens with a review of the historical growth of the teaching of hygiene and preventive medicine. Although the first national health system arose in Denmark as early as 1740, and was followed a few years later in Sweden by the setting up of a national health council, it was not until the close of the eighteenth century, when vaccination against smallpox was used on a world-wide scale, that preventive medicine became universally accepted.

Continuing their historical review the authors stress that the developments in public health teaching in the latter part of the nineteenth century were greatly influenced throughout Europe by the remarkable progress in the sciences basic to public health, especially physiology and bacteriology. At this time rapid changes were taking place and the progress made, not only in preventive medicine but in teaching and the dissemination of knowledge, was considerable. The rise of public health as a medical career coincided with two developments which greatly influenced the teaching programmes. They were: the coming of the " age of environmental hygiene " in which stress was laid on the environmental factors in the etiology of disease, and the foundation of the sciences of bacteriology and biochemistry. As the authors point out, however, administrative changes came only gradually, and health insurance, for example, was not introduced until 1883 in Germany and 1911 in the United Kingdom. But the late nineteenth and early twentieth centuries saw an advance in what the authors term " the personal health services " and there was little doubt that by the beginning of the Second World War the practice of public health had been " revolutionized within a generation ".

New aspects of public health work

The end of the Second World War brought many changes in the status of the health officer, and also to the approach made to the question of studies and training. The gigantic tasks of restoration in a war-torn world called for thousands of trained physicians, engineers, nurses and sanitarians. Most countries were faced with the difficulty of turning out trained personnel, given teaching methods and courses which were inadequate. As the authors point out: " It became clear also that, if training were to be undertaken on a considerable scale, it would be necessary to give official recognition and

status to the health officers who qualified themselves, as well as adequate remuneration and the enjoyment of an honourable profession. Candidates of good quality are not attracted to a profession unless certain simple conditions of status are recognized by the government and the people."

Following the end of the Second World War various types of training courses, both theoretical and practical, were established. These served immediate needs well enough but in later years it became obvious that more permanent methods would have to take their place. After a period of seven years' intensive reconstruction it was felt that the time had come for a review of principles and methods. It was this need which led directly to the sponsorship by WHO of the two Study Conferences previously mentioned.

Undergraduate training

Having surveyed the historical background of the problem the authors take up the two principal themes of their study, namely: undergraduate education in hygiene and preventive and social medicine, and postgraduate education in public health. With regard to the broad aspects of undergraduate education in social medicine, the authors express the view that uniformity of curricula is neither possible nor desirable. However, they put forward two principles which they feel are probably common to all countries and which have been stressed in all recent reports and discussions on medical education. They are: " 1. Undergraduate medical education should be a continuation of general education, not merely a vocational training. 2. The undergraduate curriculum should be non-specialist in character. Though it should produce graduates who are prepared for advancement by further studies for specialism in any branch of medicine, it must take into consideration the fact that most future physicians will be general practitioners." Passing to the physician's task and the relationship between doctor and patient as it affects undergraduate training, the authors comment that the character of medical practice has changed considerably in the course of the past fifty years. " The medicine of today is expected to include an effective interest in patients as men and women who lead a particular kind of life in a certain kind of way, as persons with family ties and obligations, with anxieties, hopes and fears. A good practitioner takes into account social and economic factors, conditions of work and leisure, standards of housing, clothing, diet, and personal habits. He sees the injured worker as a bread-winner, the women in childbirth as a wife and mother, the handicapped child as an educational problem and a source of special anxiety for the parents.

" Hence, from the beginning of his training, the medical student should be led to embrace the notion of a diagnosis which relates both the physical condition and the patient himself to the environment, and often especially to those aspects of the environment which are described as social."

Indeed, the social aspects of the medical practitioner's work are today linked very closely with the positive promotion of health and the prevention of disease. " In one sense there is no dividing line between the medical care of the sick and the prevention of disease. Early diagnosis and therapy are preventive in so far as they arrest the progress of disease and avert complications and disabilities. The effective treatment of some diseases is also the means of preventing new occurrences."

The authors are alive to the defects of undergraduate medical training which must be changed before it can adequately fulfil the various roles assigned to the medical profession by society. They see present day shortcomings in the following terms: " 1. The teaching is concentrated almost entirely on the patient in hospital and thus is divorced from the realities of the circumstances in which he became ill and to which he will return on leaving hospital. 2. It tends to have an exclusively clinico-pathological outlook, and consequently to neglect the relationships between the patient and his environment. 3. In many countries it does not

include adequate instruction in matters upon which health largely depends: nutrition, housing, personal hygiene, socio-economic status, social security, and organized public health and medical-care services. 4. The curriculum is overloaded and lacks coherence. 5. It is too much concerned with factual detail, and too little with method and the development of sound judgement and a critical attitude of mind."

The above points refer to medical training as a whole; there remains the important role of social and preventive medicine in undergraduate education. How far short of the requirements of modern medicine and a liberal education would the medical graduate fall if his training were to be confined to the traditional pattern of internal medicine? The authors answer their own question by saying that he might be sadly lacking in both respects. Indeed, they suggest that a medical graduate with this type of training might very well practise medicine without ever having asked himself: " How much of this disease is there? In what circumstances is incidence high or low? How might it be prevented? He might never have formulated the questions: What social aids are needed to reinforce medical care? How completely and in what manner are they provided? What is my part as a practising physician in the medical and welfare services maintained by the state and other agencies? What are the wider duties in society of the profession to which I belong? " As the authors say, there can be little doubt about the vocational and educational inadequacy of medical training which does not raise, examine, and point the way to answering these and other questions of like nature.

Basis for teaching programmes

Because of the wide differences which exist between one country and another no curriculum could be framed which would hold good for Europe as a whole. Assuming that the normal medical curriculum consists of three periods : pre-medical, pre clinical and clinical, the authors give the following as a typical sequence :

" 1. Pre-medical (first year) : During this period, the subjects studied usually include chemistry, physics, and biology, and in a few schools additional subjects such as medical history, medical sociology, psychology, and philosophy. 2. Pre-clinical (second and third years): The subjects studied include anatomy and physiology, biochemistry and histology. General pathology and pharmacology are also sometimes introduced towards the end of the period. 3. Clinical (fourth year onwards): In addition to formal clinical studies and hospital practice, the subjects introduced during this period usually include forensic medicine, pharmacology, pathology, and bacteriology."

Introducing new subjects

The teaching of hygiene and preventive and social medicine must also take their places in the medical curriculum. There are differing points of view as to the most apposite time for starting this teaching but, as is pointed out in the monograph, a broad answer to this question was proposed at the WHO Study Conference at Nancy. This was: " 1. The medical curriculum should have a preventive and social orientation at an early stage. 2. The teaching of hygiene and preventive and social medicine should be spread over the clinical, and to some extent also over the pre-clinical years of study. 3. Introductory or orientation courses are desirable at two points, a short introduction to medicine in the pre-medical year, and an introduction to the preventive and social point of view between the pre-clinical and clinical periods of study. 4. It would be advantageous to deal with statistical methods and biometry in the pre-clinical period of study." As the authors remind us, these conclusions are substantially the same as those reached by a number of national committees in recent years.

Examining present day teaching methods and procedures in Europe, the authors formulate a number of principles relating espe-

cially, though not exclusively, to the teaching of hygiene and preventive and social medicine at the undergraduate level. In this regard they comment as follows : " 1. Teaching methods should take into special consideration the factor of student interest. As far as possible, topics should be unmistakably related to clinical medicine by the teaching method adopted, and where this is not appropriate their purposes and applications should be explained. Clinical subjects do not need to be justified to the student nor the method of teaching them explained; but there are many parts of the social medical curriculum which require that the teacher should explain not only the purpose of each part of the curriculum, but also often the teaching method itself. 2. There is an obvious advantage in introducing topics by way of clinical problems and illustrating them by examples with a clinical bearing whenever this is possible. 3. In general, teaching methods which give the student an active role are to be preferred, and practical exercises should be included whenever they are appropriate. The main object of formal teaching should be to arouse interest and orientate rather than impart factually information. 4. To teach social medicine effectively requires intensive collaboration between the department of social medicine and other departments of the medical faculty and outside agencies:

"(*a*) Since, so far as the student is concerned, the application of social medicine begins in the wards and out-patient departments of teaching hospitals, clinical social medicine can be taught partly by traditional bedside methods. This involves, as a rule, collaboration with clinical departments ;

"(*b*) Because the teaching which begins at the bedside extends through a wide range of services into every aspect of community life, collaboration outside the faculty is also essential."

Post-graduate training in public health

With regard to the principles of post-graduate teaching, the authors remark that the main purpose of the post-graduate course in public health is to give the student a thorough working knowledge of the public health services and to bring him into close touch with the practical problems of health administration with which he will have to deal as a health officer. With this aim in view the authors examine the scope of the post-graduate curriculum. They state : " Theoretical teaching plays only a small part in a course of this kind, yet it is necessary in order to direct the student's attention to certain fundamental subjects in which practical applications might be very limited in any one period. Lectures are indispensable in such subjects as public health law, the duties and the powers of a health officer, and the legal basis of such everyday matters as housing and environmental health services. The greater part of a teaching course must be closely related to subsequent practice; it should therefore include visits with practising health officers to sanitary installations, such as water supplies, sewage-disposal schemes, and other public works as well as to some ' personal health services ', such as ante-natal and infant welfare clinics, school health services, hospitals, homes for handicapped children, and other institutions."

Functions of public health officers

These views on the scope of a post-graduate curricula are not merely those of the authors of this monograph. Rather they might be termed a consensus of opinion stemming from the two WHO Study Conferences. These guiding principles lead to an equally important matter, which must be borne in mind in the preparation of any teaching programme, namely: the precise function of a medical officer of health. In broad terms the authors view the practical functions in the following terms : " The health officer deals with man in his environment. He is primarily concerned with the health and well-being of the individual, the family, and the community in the environmental setting in which they live and work.

" It is obvious that preventive and curative medicine cannot be separated; the family

doctor is concerned with prevention when he is called in to care for the sick, and the health officer is concerned with sickness when he traces the pattern of an epidemic. Neither of them can be effective in isolation; in team-work the family doctor's allies are the hospital and its consultant and specialist staff, and, at the intimate level of daily practice, the nurse and the midwife. In a similar setting the team of which the health officer is leader includes among its principal members the public health nurse, the engineer and the sanitarian. Team-work has become accepted practice in many of the health services, such as infant welfare, school health work, or environmental control."

The authors express some doubt whether the considerable changes which have occurred in the last decade or so in public health practice have been fully reflected in teaching programmes. They comment : " There is a time-lag between the demands of day-to-day practice and its realization in teaching methods; and the school is often reluctant to change its subject-matter until long after its application to the world of affairs is obsolete. In this context we are not dealing merely with the scientific techniques, to which reference has been made already. We are regarding advances in social relationships associated, for example, with improvements in communications, housing and town planning, the formation of neighbourhoods, the care of the aged, and the numerous extensions of the concept of welfare. It is of the utmost importance that the health officer should be able to interpret these social changes to the people and their representatives. He does not acquire the necessary knowledge or understand its significance without training and practical demonstration."

Future prospectus for public health

It is against this background that it is possible to make an assessment of what may be required of a public health officer in the future. Starting with a comment on the change which has come about in the role of the family physician, the authors draw a parallel with the situation in the public health service : " Just as the doctor in general practice should be an adviser on health and sickness to the family as a whole, so the health officer should be a general adviser on health to the community. Since the health services came into existence he has been the recognized leader of a team of workers responsible to governmental authorities, both central and local, for the health of the people. Of recent years, however, there have been signs of a desire on the part of some members of this team to detach themselves and go their own way. Sometimes veterinary officers, sanitarians, and others have felt that their subject was so important that it ought to receive from their authorities independent recognition, yet it was never more vital than it is today to maintain the team spirit in public health. The building of separate sub-departments, each with its own head, is fraught with danger. The integration of the services means as much to the health and welfare of the people as the contributions of the individual professional members."

The monograph concludes with an analysis of information on social medicine, public health and hygiene teaching in the medical schools and institutes of nineteen European countries. For the first time the essential facts have been gathered together and presented in an easily digested form. The chart which accompanies the present article is an epitome of some of the valuable data contained in the final chapter.

HYGIENE AND PUBLIC HEALTH TEACHING IN NINETEEN EUROPEAN COUNTRIES *

Country	University or Medical School	Undergraduate					Post-graduate
		Hygiene	Preventive medicine	Social medicine	Public health	Occupational health	Length of course
Austria	Graz	+	+				One year
	Innsbruck	+	+				One year
	Vienna	+	+				One year
Belgium	Brussels	+		+	+	+	One year
	Ghent	+			+	+	One year
	Liège	+			+	+	One year
	Louvain	+			+	+	One year
Denmark	Aarhus	+		+			
	Copenhagen	+		+			One year
Finland	Helsinki	+		+			
	Turku	+		+			
France	Algiers	+	+				
	Bordeaux	+	+				
	Clermont-Ferrant	+	+				
	Lille	+	+				
	Lyons	+	+				
	Montpellier	+	+				
	Marseilles	+	+				
	Nancy	+					
	Paris	+	+				One year
	Strasbourg	+	+				
	Toulouse	+	+				
	Nantes **	+	+				
	Rennes **	+	+				
Germany (Federal Republic)	Berlin (Free University)	+	+	+	+	+	
	Bonn	+	+	+	+	+	
	Dusseldorf	+	+	+	+	+	Five months
	Erlangen	+	+	+	+	+	
	Frankfurt-am-Main	+	+	+	+	+	
	Freiburg	+	+	+	+	+	
	Giessen	+	+	+	+	+	
	Gottingen	+	+	+	+	+	
	Hamburg	+	+	+	+	+	Five months
	Heidelburg	+	+	+	+	+	
	Kiel	+	+	+	+	+	
	Cologne	+	+	+	+	+	
	Mainz	+	+	+	+	+	Five months
	Marburg	+	+	+	+	+	
	Munich	+	+	+	+	+	Five months
	Munster	+	+	+	+	+	
	Tubingen	+	+	+	+	+	
	Wurzburg	+	+	+	+	+	

* This chart gives a general indication of the scope of undergraduate and post-graduate courses in the various medical schools. Full details are included in Chapter 15 of the monograph.

** Medical schools

HYGIENE AND PUBLIC HEALTH TEACHING IN NINETEEN EUROPEAN COUNTRIES *(continued)*

Country	University or Medical School	Undergraduate					Post-graduate
		Hygiene	Preventive medicine	Social medicine	Public health	Occupational health	Length of course
Greece	Athens	+					One year
	Salonika	+					
Iceland	Reykjavik	+	+				
Ireland	Dublin *	+	+	+			Five months (University College)
	Cork	+	+	+			
	Galway	+	+	+			
Italy	Bari	+	+	+			Two years (Seven Institutes)
	Bologna	+	+	+			
	Cagliari	+	+	+			
	Catania	+	+	+			
	Ferrara	+	+	+			
	Florence	+	+	+			
	Genoa	+	+	+			
	Messina	+	+	+			
	Milan	+	+	+			
	Modena	+	+	+			
	Naples	+	+	+			
	Padua	+	+	+			
	Palermo	+	+	+			
	Parma	+	+	+			
	Pavia	+	+	+			
	Perugia	+	+	+			
	Pisa	+	+	+			
	Rome	+	+	+			
	Sassari	+	+	+			
	Siena	+	+	+			
	Turin	+	+	+			
Netherlands	Amsterdam	+		+			Five months and nine months
	Groningen	+		+			
	Leyden	+		+			
	Nijmegen	+		+			
	Utrecht	+		+			
Norway	Oslo	+	+	+			Fifteen weeks
Portugal	Coimbra	+					Six months
	Lisbon	+					Six months
	Oporto	+					
Spain	Barcelona	+	+	+			One year
	Cadiz	+	+	+			
	Granada	+	+	+			
	Madrid	+	+	+			
	Salamanca	+	+	+			

* **University College** **Trinity College** **Royal College of Surgeons in Ireland**

HYGIENE AND PUBLIC HEALTH TEACHING IN NINETEEN EUROPEAN COUNTRIES (*conclusion*)

Country	University or Medical School	Undergraduate					Post-graduate
		Hygiene	Preventive medicine	Social medicine	Public health	Occupational health	Length of course
Spain (*cont.*)	Santiago	+	+	+			
	Seville	+	+	+			
	Valencia	+	+	+			
	Valladolid	+	+	+			
	Zaragoza	+	+	+			
Sweden	Goteborg	+	+	+	+	+	
	Lund	+	+	+	+	+	
	Stockholm	+	+	+	+	+	Eight weeks
	Uppsala	+	+	+	+	+	
Switzerland	Basle	+	+		+		
	Berne	+	+		+		
	Geneva	+	+		+		
	Lausanne	+	+		+		
	Zurich	+	+		+		
Turkey	Ankara	+					Three months
	Istanbul	+					
England and Wales	Birmingham		+	+			
	Bristol		+	+			Nine months
	Cambridge		+	+			
	Cardiff		+	+			Nine months
	Leeds		+	+			Nine months
	Liverpool		+	+			Nine months
	Manchester		+	+			Nine months
	Newcastle		+	+			Nine months (University of Durham)
	Oxford		+	+			
	Sheffield		+	+			
	London *				+		Nine months (Two Schools)
Scotland	Aberdeen		+	+			Nine months
	Edinburgh		+	+			Nine months
	Glasgow		+	+			
	St. Andrews		+	+			Nine months Dundee (St. Andrews University)
Northern Ireland	Belfast (Queen's)		+	+			Nine months
Yugoslavia	Belgrade	+		+			Six months
	Zagreb	+		+			Six months
	Ljubljana	+		+			
	Sarajevo	+		+			
	Skoplje	+		+			

* Charing Cross, Guy's, King's College, The London, Middlesex, The Royal Free, St. Bartholomew's, St. George's, St. Mary's, St. Thomas's, University College, Westminster

WORK OF THE LATIN AMERICAN CENTRE FOR THE CLASSIFICATION OF DISEASES*

The Latin American Centre for the Classication of Diseases was established within the Ministry of Health and Social Welfare of Venezuela as part of the Division of Epidemiology and Vital Statistics. The formal announcement of this new Centre was made in July 1955 by the Director of the Pan American Sanitary Bureau (Regional Office for the Americas of the World Health Organization). The Centre works under the joint auspices of PASB and of the Government of Venezuela.

The Third World Health Assembly created the World Health Organization Centre for the Classification of Diseases, which was established on 1 January 1951 at the General Register Office of England and Wales in London. In view of the proven value of this Centre in solving problems of general interest concerning the application of the *International Statistical Classification of Diseases, Injuries and Causes of Death*, it was thought necessary to establish a similar centre for the Americas, to consider the problems peculiar to Spanish-speaking countries and the use of the Spanish version of the Classification.

The Latin American Centre works in close collaboration with WHO Headquarters in Geneva, the Pan American Sanitary Bureau, and the London Centre.

The Centre's general aim is to promote the completeness, accuracy, and comparability of mortality statistics in the Spanish-speaking countries of the Americas. Its programme was drawn up during a meeting, held in Caracas from 27 May to 2 June 1955, by officials of the World Health Organization, the Pan American Sanitary Bureau, the Ministry of Health and Social Welfare of Venezuela and the Inter-American Co-operative Public Health Office, which carries on activities in Venezuela.

One of the main tasks of the Centre is to assist and advise health and statistical administrations in the application of the International Classification, but it also performs a number of other functions related to the improvement of morbidity and mortality statistics. A brief account of some of its activities is given below.

Training courses on the Classification

Two training courses have been held at the Latin American Centre for the Classification of Diseases. The aim of the first course was to give detailed instructions on the coding of causes of death to officials responsible for this work in the national vital and health statistics offices, as well as to establish close working relations between all Latin American countries and the Centre with respect to problems of medical certification and classification. It was held from 12 to 23 September 1955 at the Caracas Headquarters of the National Hygiene Institute and was attended by 12 students from nine countries. Dr Dario Curiel, Director of the Centre, was directly responsible, and was assisted by Mrs Elena Almenar de Ochoa, Chief of the Vital Statistics Section, Ministry of Health and Social Welfare, Venezuela. Twelve sessions were devoted to lectures, in almost all of which exercises in coding were given. There were also eight half-day sessions devoted to visits, seminars, etc. All the coding sessions included exercises on the application of the rules and their exceptions, supplementary rules, the special problem of tuberculosis, cancer, rheumatic fever, accidents, operations and prematurity, questions relating to sex and age factors, late effects, doubtful diagnoses, omission of intermediate cause, etc.

* Based on a report submitted by Dr Dario Curiel, Chief Medical Officer, Division of Epidemiology and Vital Statistics, Ministry of Health, Venezuela, to the WHO Expert Committee on Health Statistics, Geneva, December 1956

The second course was likewise designed to give detailed instructions in the use of the International Classification and was directed principally to persons actually engaged in the coding of causes of death, as well as to demonstrate to them the work of the Latin American Centre in the field of medical certification and classification. It was held from 20 to 31 August 1956, also at the Caracas Headquarters of the National Hygiene Institute, and was attended by 14 students from nine countries.

List of causes of death

The diversity of procedures in Latin American countries for the establishment of the main causes of death results in statistics which are not comparable internationally. The Director of the Centre prepared an article proposing an adaptation of List B, giving 50 causes of death for use in Latin American countries as a basic list suitable for the uniform extraction, for international use, of the principal causes of death. This article was published by the PASB in two of its periodicals.[1]

Coding of samples of death certificates

To bring about uniformity in the coding of causes of death it is planned to develop a system by means of which sample certificates, selected at random from various countries, will be sent to the Latin American Centre for classification and comparison with the national coding. Before commencing this work, it was felt that a preliminary interchange of samples with the WHO Centre in London would be advisable to ensure uniform coding.

For this purpose the Latin American Centre has already selected and coded 580 certificates picked at random from Venezuelan sources to be sent to the WHO Centre in London as soon as the English versions of the certificates have been completed. In turn, the Latin American Centre has received samples of certificates intended for an exchange of coding between England and Wales, Canada and the United States, and, in accordance with a suggestion by the WHO Centre in London, these samples are at present being coded.

The Latin American Centre has received from one country a certain number of certificates regarded as difficult to codify and has sent the country concerned the solutions which appeared most appropriate.

Development of teaching material

The Latin American Centre has adapted for Spanish-speaking countries the film strip on medical certification prepared by the United States National Office of Vital Statistics. The strip consists of a series of 58 pictures accompanied by a commentary. In the adapted version, intended for various countries, references of a strictly national character have been eliminated and a few examples added where more explanation seemed necessary. A set of diapositives has been prepared for the work of the Centre and has been used in the courses for coders as well as in national courses.

Other steps have also been taken to develop and apply techniques considered to be useful and effective. A programme was prepared which is being carried out jointly by the Inter-American Co-operative Public Health Office and the Division of Epidemiology and Vital Statistics, consisting of a " flip chart " which explains and demonstrates to physicians the method of filling up the medical certificate of cause of death. The " flip chart " has been put into extensive use in an experimental area in Venezuela, in courses and at meetings of health officials and rural doctors; it has met with an excellent reception. As part of the programme mentioned above, the Latin American Centre has had the " flip chart " reproduced in another booklet including the series of figures and an explanatory text in both Spanish and English.

[1] *Boletin de la Oficina Sanitaria Panamericana*, 1956, **4**, 192-203 and *Health Statistics*, 1955, **4**, 3-18

Medical certification

Preliminary steps are being taken to organize a seminar on medical certification. The training course planned for 1957 to explain the new rules might serve in part for this purpose. One half of each day could be devoted to classification in connexion with the Seventh Revision and the other half to round-table discussions of methods for the improvement of medical certification, the completeness and accuracy of data and the procedures recommended, so as to obtain comparable mortality statistics in the Americas. This course is planned for August 1957.

One of the essential aims of the Centre, ever since its inception, has been the study of methods to improve medical certification of cause of death in areas with limited medical personnel. The joint programme being carried on by the Division of Epidemiology and Vital Statistics and the Inter-American Co-operative Public Health Office to improve the registration of deaths and medical certification of cause of death, both with and without medical attendance before death, has already yielded encouraging results. The report of the technical consultant, which has been circulated, describes both the procedures and some of the results obtained after the experiment, begun at the end of October 1955 in a previously selected area of Venezuela, had been under way for four months.

It can be seen from the report that, apart from instructions on the use of the international medical certificate directed to all physicians, sections have been included in the death certificate for " certification of the probable cause of death after investigation by a legally appointed physician, when the person concerned dies without medical attention " and for the " declaration to the civil authorities of the supposed cause of death when there is no physician available to make out a certificate ". The first section " requests a description of the symptoms and a declaration of the probable cause of death ", based on an analysis of the symptoms, and the second requires the civil authorities, in the absence of physicians, to state in particular " the cause of death as reported by the relatives or friends of the deceased person, as well as the main symptoms noted by them ".

The report indicates that, according to the initial results, of all deaths outside the chief village of the commune *(municipio)*,[2] i.e. in various rural areas, only 8 (6%) occurred in cases attended by physicians who certified the cause of death; 117 (83%) were medically certified, although these cases had not received medical attention before death, and in 15 cases (11%) the alleged causes of death were recorded by the civil authorities purely as given by the family of the deceased, without statements from physicians. It is also interesting to note the results when the cause of death was reported by medical officers, on the basis of information obtained after death, together with the symptoms upon which their conclusion was based. Gastritis and enteritis are the main causes certified in 30 cases. Pneumonia comes next (28 cases), sclerotic and degenerative cardiac diseases occupy the third place (16 cases), and are followed by tuberculosis, other heart diseases and diseases of the new-born (15 cases each). Fourteen cases of malignant neoplasms were reported. Non-infectious diseases peculiar to early infancy and malformations or traumatisms at birth were diagnosed in 12 cases. It is noteworthy that these causes, although not necessarily in the same order, are those which also occupy the highest places in Venezuelan mortality statistics based on medical diagnoses made before death.

Work in the experimental area is continuing. Furthermore, general studies on causes of death certified in the absence of an attending physician continue to be given priority in the work of the Centre. In a recent study on gastro-enteritis in Venezuela an effort has been made to correlate information given in certificates of causes of death issued by physicians with information obtained by civil authorities from statements made by families when no physician was in attendance during the illness. A method

[2] The smallest political division in Venezuela

has been devised which makes it possible to evaluate the latter type of information and to make use of it in cases not attended by physicians or other medical personnel. Similar studies are contemplated with a view to recognition of the main causes of death in cases where no physician has been in attendance.

MEAT HYGIENE

The importance of meat and meat products in the daily life of a community needs no emphasis. Meat, however, is a perishable commodity and poor handling and unhygienic preparation very often exact a heavy public health and economic toll. Countries can ill afford the disruption of work caused by meat-borne diseases, not to mention the considerable wastage and loss to the population of two of its fundamental nutritional needs—protein and fat.

Meat hygiene can be considered as essentially a public health function, as its primary purpose is to prevent transmission of disease to man, and to provide a safe and wholesome product for his consumption. The secondary objects of meat hygiene practice include the reduction in losses of meat and meat products and the prevention of disease transmission to other food animals.

The entire question of meat hygiene and the safe processing of meat from producer to consumer is treated in a WHO monograph[1] which has just been issued. This study, which includes a number of contributions to the WHO/FAO Seminar on Meat Hygiene (sponsored jointly by the Regional Office for Europe of the World Health Organization and the Food and Agriculture Organization, and held in Copenhagen from 22 to 27 February 1954), revised and brought up to date where necessary, is primarily designed for veterinarians, medical officers, sanitarians and other public health workers.

Besides dealing with the practical health problems of the meat industry, from the antemortem care of slaughter animals to the hygienic processing and marketing of meat and the sanitary disposal and reclamation of by-products, it covers such wider aspects of meat hygiene as the epidemiology of meat-borne diseases; the training of meat inspectors; the current meat hygiene practices in a number of European countries; and the special meat hygiene problems in the tropics.

Epidemiology

For a discussion of the numerous processes involved in the production of safe meat it is essential to have a good understanding of the epidemiology of meat-borne diseases. This important subject is dealt with at length by Professor C. E. Dolman in the first chapter of the monograph. After reviewing the efforts made by man through the centuries to bring about effective meat control measures—and in this connexion it is interesting to note that only rudimentary meat inspection was carried out in a few cities in the United States before the year 1884—the author classifies meat-borne diseases under the following three general headings :

(1) meat-borne diseases of chemical or toxicological origin;

(2) endogenous (intravital) animal infections transmissible to man by meat (zoonoses);

(3) infections and intoxications due to exogenous (human and environmental) contamination of meat and manufactured meat products (e.g., bacterial food poisoning).

Various typical examples of conditions falling under the three general headings are considered from an epidemiological point of view. In general terms the dangers implicit

[1] *Meat Hygiene (World Health Organization: Monograph Series,* No. 33) For contents see p. 56

in the growth of cafeteria eating and mass-produced meals are examined. As Professor Dolman remarks: " In its hunger for animal protein, humanity is exposed to a formidable array of potential hazards. The laws of chance, various specific immunities, and the alimentary juices, generally carry the individual through each day without harm from the food he eats. But the odds are being weighted against him by the drastic changes in feeding habits occurring in most civilized communities. As Wilson has lately pointed out:

> In the communal kitchens practices have been taken over from the home which, though unobjectionable when applied to small quantities of food, present dangers of their own when large masses of food are being handled. In addition, a great variety of foods, cooked and uncooked, processed and unprocessed, contaminated to some degree with potentially dangerous organisms, have been coming on to the market and causing not only food poisoning but a wide dissemination of infective materials among the human and animal population.

" Indeed, in due course, the inescapably growing propinquity of mankind, and the intimate intermingling of man with animals, may create new types of danger to health through our food supply which will baffle scientific ingenuity.

" Nevertheless, it is not new scientific discoveries that are needed to lessen the waste and misery due to meat-borne diseases—or to most other groups of diseases—but rather the effective dissemination and application of currently available knowledge. Of course it is desirable (and unavoidable) that research workers should continue, for example, to uncover hitherto unsuspected animal reservoirs of potential human disease; to investigate the germicidal efficiency of various forms of irradiation applied to foods; and to develop new detergents for cleaner washing of restaurant utensils. Meanwhile, nevertheless, in some parts of the world where poverty is rampant and tradition sanctions custom, animal dung may be used for building houses, for cleaning floors, and for cooking food. In far wealthier countries, millions of people daily consume food contaminated with human faeces through the inadequately washed hands of those who serve them. Certainly we cannot deplore the ignorance which endorses the former state of affairs and yet condone the carelessness and laziness governing the latter. Instead, it is fairer and better to recognize that there is room for broadcasting knowledge and awakening conscience in respect of those two fundamentals for reducing the toll of meat-borne diseases—temperature control, and cleanliness."

Problems in tropical areas

While the differing aspects of meat hygiene measures in temperate climates have been the subject of numerous studies, the rather special problems involved in handling meat and meat products in tropical areas have received less attention. Dr Martin M. Kaplan takes up this important matter and gives a description of the particular methods used for ante-mortem and post-mortem inspection of meat and its marketing in the tropics. He emphasizes that without proper handling after slaughter all efforts which may have been made for improving conditions in the abattoir and for hygienic ante-mortem inspection are without avail. " From a public health point of view " says Dr Kaplan, " the most elaborate hygienic precautions in the abattoir can largely be nullified by subsequent poor handling of the meat. It is therefore incumbent upon public health authorities to focus their attack where it will be most effective, and this will vary according to local conditions. Public health funds are too limited to waste on expensively constructed abattoirs combined with fundamentally faulty hygienic and inspection procedures; or on abattoir, market or restaurant control regulations with large technical loopholes which serve to create either a false sense of security or a lack of meat products because of unnecessary condemnations. Equally, little or no control anywhere along the line usually means human disease, uncontrolled animal epozootics, the supply of highly contaminated meat to the consumer, and enormous wastage because of the poor

keeping qualities of such meat. Education in food hygiene should start in the schools to help create a public which would not countenance unhygienically produced and sold meat. A very valuable procedure is the encouragement of sanitary methods by fostering healthy competition among food producing and retailing establishments through the award of a 'certificate of merit'.

"Progress in meat hygiene in tropical areas rests largely on parallel economic development and health education of the public. Such progress is not inevitable; concrete measures have to be taken and steadily applied, with the precaution that the goal set should not be out of view of the immediate practicalities of any local situation."

Slaughter

The contribution by Dr Roger N. Benoit, which is devoted to a detailed examination of the construction, design and operation of a modern abattoir, is of practical importance to public health workers in all countries, and particularly those concerned with problems of meat hygiene. Current thinking has brought about a change in attitude towards the abattoir. It is " a factory in which cattle and other live-stock are slaughtered for conversion into meat. It must cease to be a mere agglomeration of primitive buildings and sheds, unhygienic both for the men who work in them and for the housing of animals and the preparation of carcasses." Dr Benoit is also convinced that the abattoir system should be a public service with an independent budget. His analysis of abattoir operations covers every aspect from lairage to waste product recovery.

Consideration of abattoir construction leads naturally to the question of modern techniques in slaughtering food animals. There have been various mechanical methods in use in the course of the last half-century, and recently a number of countries have adopted electrical stunning for both large and small animals. Dr Phyllis B. Croft points out that although there has been some divergence of opinion in the past on the efficacy of the latter method, if properly applied it could undoubtedly prove useful as it is quiet compared with other types of humane-killer, and is, at the same time, very effective. For success it depends on the passage through the animal's brain of an adequate amount of electricity in a sufficiently short period of time. But this in turn depends largely on the voltage applied and on the resistance. Dr Croft examines this and various other technical problems which still have to be surmounted and also outlines the progress which has been made recently in different stunning processes.

Meat hygiene practices in Europe

A chapter devoted to meat hygiene practices in Europe is based on replies made to a WHO questionnaire, circulated to a number of European governments. With regard to meat inspection, it appears that there are many countries where the division of responsibility among government departments is not clear. Although no uniform pattern exists, it is true to say that the effective operation of a meat hygiene service must rest on the close working relationship between medical, veterinary, and sanitary engineering workers.

Although there is no standard meat hygiene legislation which is generally applicable in Europe, it is clear from the answers given to the questionnaire that much of it is similar in content and does result in practical and effective supervision.

Information regarding meat hygiene practice has been submitted generally for the so-called food animals—the term used in meat inspection legislation. These animals include cattle, calves, sheeps, pigs, goats, horses, donkeys, reindeer, and even bears and whales (Norway). In most of the countries covered by the survey it is not permissible to sell meat or meat products for human consumption which have not been submitted to official meat inspection. There are, however, certain countries where local conditions demand a certain flexibility in the application of legislation. Included in this category are Finland,

MEAT HYGIENE

An illustrated feature based on material in the recent WHO monograph reviewed in this issue.

Meat hygiene practices, whether related to pre-slaughter care of the animal, humane killing, condemnation of diseased meat, safeguards against subsequent contamination, or any one of the potential dangers to the safe consumption of the product, are all designed to ensure the production of sound and wholesome meat—a matter which is of steadily growing importance nowadays.

One of the most modern devices for stunning prior to slaughter is an electrical apparatus. A variety of patterns are now in use in different parts of the world, but the underlying principle is essentially the same. To be effective, the current must pass quickly through the animal's brain to produce what has come to be known as an electro-plectic fit. This requires a current sufficient to avoid mere paralysis leaving sensation still extant, but at the same time not great enough to cause fractures or undesirable signs in the carcass.

When the current is switched on, in pigs, all the voluntary muscles contract violently and the animal falls over (**1**); cattle drop senseless to the ground (**2**). Limbs are rigidly extended or flexed according to the species, and respiration is arrested. After about 10 seconds, the muscles relax and the animal remains in a flaccid condition. In the pig, unconsciousness lasts for about 60 seconds. Normally, bleeding is practised within 10 seconds after the electric shock. The apparatus in use in English bacon factories—similar in appearance to a pair of tongs (**1**)—works on 70 to 90 volts, making safe operation a virtual certainty. Otsuki, in Japan, has recently developed a similar instrument, but using a higher voltage. Holland has gone further and developed the Elther instrument (**2**) which can deliver any given dose of watt-seconds.

Presence of such a condition as salmonellosis, tuberculosis or anthrax in an animal carries the risk of transmission to humans. To these may be added swine erysipelas, leptospirosis, cysticercosis, trichinosis, and a variety of acute septic conditions—to mention but a few—which may call for total condemnation of the carcass. In general, strict inspection procedures are laid down for the detection of potentially dangerous conditions of the kind.

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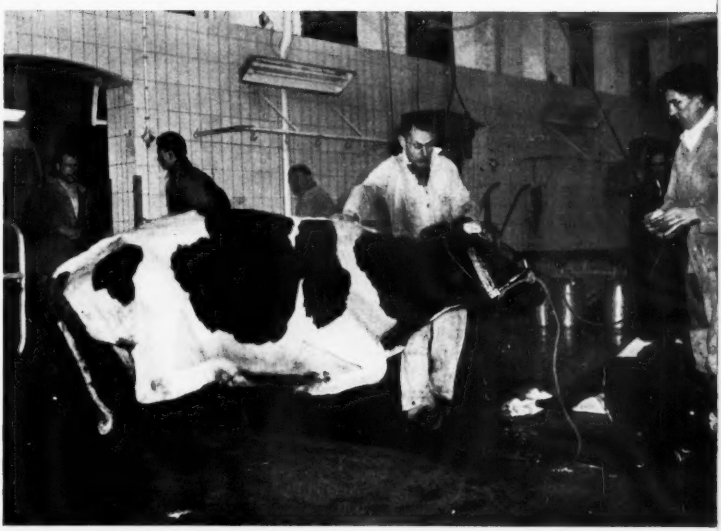

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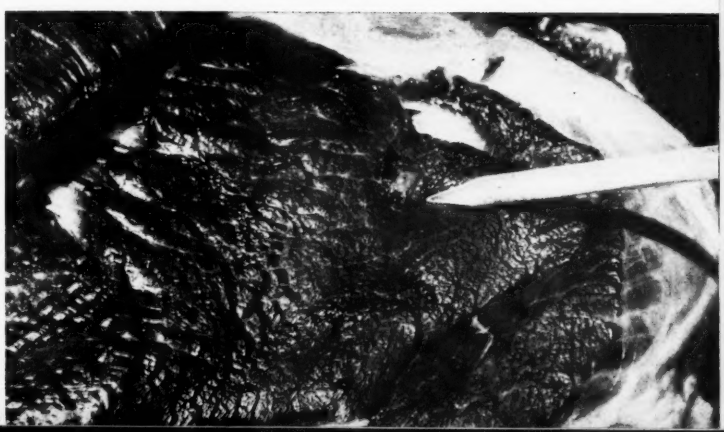

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Particularly important are the meat inspection practices designed to avoid wastage by delimiting for condemnation the diseased parts of a carcass or by indicating treatment to render parasite-infected carcasses safe for consumption. Techniques for detecting in the cow the encysted larvae of tapeworms, for example, include examination of the masseter muscles by incision (3). Where heavy infection is found, the whole of the carcass is subject to condemnation. In cases of lighter infection, the meat may be pickled, sterilized by steam, or refrigerated for a lengthy period, before being put on public sale. In the pig, predilection sites of tapeworm larvae include the tongue, which in some Latin American countries is often withdrawn and palpated

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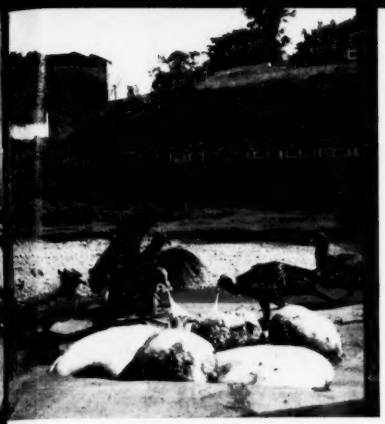

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during ante-mortem inspection (**4**). In Germany, the Leitz illuminated trichinoscope (**13**) is used for detecting the presence of certain thread-like worms (the cause of trichinosis in humans). In the USA, on the other hand, in the interest of rapid processing of pork, preference is given to compulsory treatment by heat, refrigeration or curing, for the destruction of possible live trichinae, where the processed meat product is consumable without further cooking.

Where safeguards against subsequent contamination of meat are not stringently observed, all previous precautions will be of no avail. In the abattoir itself, the carcasses, after skinning and washing down, are usually subjected to immediate refrigeration, to bring down the inside meat temperature to not more than 38°C (37.4°F). In Germany, ultra-violet-ray sterilization lamps are sometimes used in cold chambers (**5**), as an added precaution.

The Tropics and sub-Tropics present special problems. The climate is the original and constant enemy, and the vicious circle of ignorance and poverty is hard to break. From long experience, however, some countries have developed an individual approach to the preservation of meat under local conditions, as for example by drying, in Kenya (**11**).

Nevertheless, much remains to be done in many of these areas, and possibilities for improving practices at a minimum of expense and trouble do exist. For example, abattoirs should be located, wherever possible, by rivers on by the sea (**10**), and measures taken to avoid the pollution of the water supply with effluent or the use of an already polluted water supply for cleaning purposes in the routine work (**7**).

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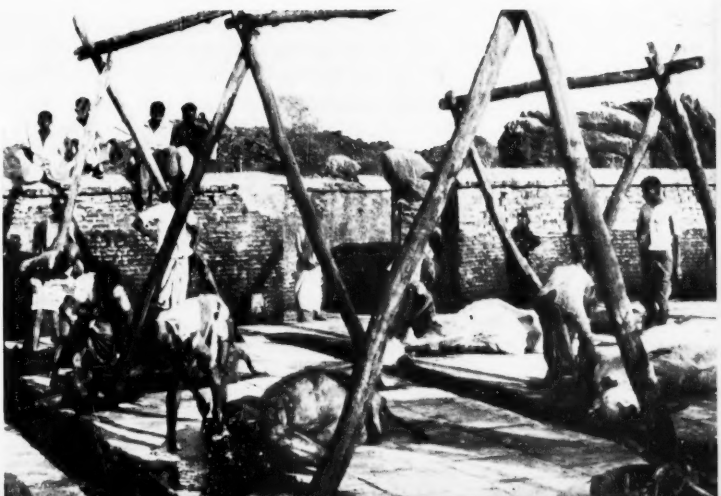

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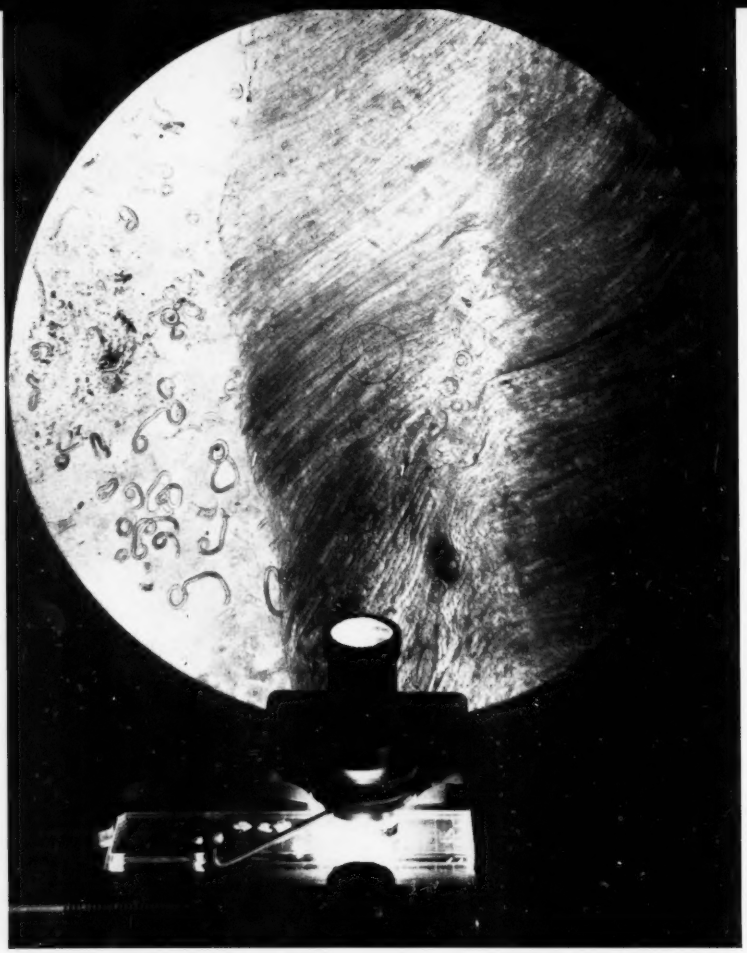

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It is not uncommon in some areas of the Far East to see large abattoirs with no protective covering at all (**12**). The screened semi-open-air (**6**) or the small concrete and stone building are more suitable, especially for rural areas.

The prevailing custom in many tropical areas of quick sale of freshly killed meat rules out the need for large refrigeration installations. Some limited facilities are useful, however, for special treatment of tapeworm-infested carcasses.

In many tropical countries, practices for the disposal of condemned meat are still unsatisfactory, thus perpetuating such diseases as anthrax and hydatidosis. Dogs or vultures (**9**) battening on the carelessly thrown aside carcasses is not an uncommon sight. The most satisfactory method of disposal is heat sterilization, with salvage of the by-products for fertilizer or feed purposes.

The innumerable faults in meat handling encountered in the marketing of meat in these countries are due largely to lack of facilities. Hasty enactment of legislation might do more harm than good, by imposing hardship on individual retailers and leading to malpractices designed to evade the law. Observance of the simple requirements that meat be not left exposed to human handling, animals, flies and dirt, could do much good. Simple, but sanitary meat stalls, where the customer and animals are excluded from direct contact with the meat illustrate this point (**8**).

Greece, Ireland, Norway, Sweden, Tunisia, and England and Wales. With regard to ante-mortem examination of food animals intended for commercial slaughter a similar pattern is found and most of the countries supplying information make this inspection obligatory.

In all the countries surveyed, with the exception of the United Kingdom, where specially trained lay personnel are used in the main, ante-mortem inspection is normally carried out by qualified veterinarians, although trained lay personnel are also sometimes employed in this work. Similar categories of staff are likewise used for the post-mortem examination of animals slaughtered for commercial purposes. This examination is obligatory by law in all the countries surveyed, with certain exceptions in Ireland, England and Wales.

In addition to legislation covering ante- and post-mortem inspection, some European countries enforce a further safeguard to meat through the bacteriological examination of

FOOD ANIMALS SLAUGHTERED IN ONE YEAR

Country	Cattle	Calves	Pigs	Sheep and goats	Horses, donkeys, and mules	Other animals
Austria	328 891	471 020	1 334 852	41 753	26 440	—
Belgium	552 637	266 658	2 088 908	97 789	59 370	—
Denmark	400 000	700 000	5 000 000	50 000	20 000	—
Finland	507 871	304 561	329 226	203 110	29 297	—
France	2 875 524	5 358 484	6 584 044	5 054 677	316 900	—
Germany [a]	2 584 500	2 700 000	14 500 000	754 400	123 500	—
Greece	130 000	120 000	100 000	2 650 000	—	—
Ireland	400 000	12 000	1 000 000	700 000	—	—
Italy	905 200	670 355	1 757 153	3 346 316	163 236 [b]	—
Morocco	259 462		64 132	1 098 885	12 599	13 196 [c]
Netherlands	528 000	757 000	2 000 000	92 000	37 000	—
Norway	183 114	182 113	326 126	453 741	9 282	1 615 518
Portugal	115 361	123 233	434 045	1 260 123	4 721	—
Spain	200 000	700 000	250 000	4 400 000	40 000	—
Sweden	350 000	950 000	1 500 000	140 000	40 000	5 500 [d]
Switzerland	258 001	514 957	901 905	116 122	13 702	—
Tunisia	61 900	12 000	9 000	350 000	8 000	1 500
		to	to	to	to	to
		15 000	10 000	400 000	9 000	2 000 [c]
Turkey	302 566	62 921	2 200	3 490 608	—	19 376 [e]
United Kingdom	2 102 919	1 097 284	2 068 604	7 499 164 [f]	55 000	—
Yugoslavia	318 254	262 208	620 203	322 705	7 629	3 088 [g]

[a] Federal Republic
[b] Horses only
[c] Camels
[d] Elk and reindeer
[e] Water buffaloes (18 441) and camels (935)
[f] Sheep only
[g] Buffaloes

carcasses and organs. This examination is required by law in certain cases in all the countries except Italy, Morocco, Spain, Tunisia and the United Kingdom. However, in some of these it is in use although not compulsory by law.

One further examination of meat mentioned in the survey is that for trichinosis. Pigs must be examined trichiniscopically in slightly less than half the number of countries covered by the survey and in certain others there is legislation with regard to the inspection and examination of pork.

This survey of meat hygiene practices in Europe concludes with some information on the handling and transportation of meat. It is of interest that legislation is now in force in all the countries covered which prescribes approval for all establishments intended for use and in use as slaughterhouses. and all premises where meat or meat products are stored, processed and/or sold. Premises covered by this legislation are under constant public health supervision and control in the countries concerned. With few exceptions, all countries have regulations in force governing the maintenance of cleanliness in handling and transportation. With regard to personnel engaged on work connected with processing of meat, it is found that slightly more than half the countries submitting information have regulations which demand physical examination for communicable diseases of such staff both before and during employment.

INSECTICIDE-RESISTANCE IN LICE

Between January and March 1951 members of the armed forces of the Republic of Korea were subjected to DDT dusting. Despite the improvement in general hygiene, and despite dusting, it was found with surprise that there was a constant increase in lice infestation. Indeed, during the first three weeks of May 1951 the percentage of infested subjects rose from 38.5% to 49.2% and then to 51%. Laboratory tests confirmed that, with certain strains of lice, doses of DDT which killed 100% of controls bred out of contact with the insecticide caused only a 46% mortality among those which had been exposed to DDT.[1]

This latter development was not new. In Japan and Korea DDT had been used successfully at the end of the Second World War, more particularly during the 1945-1946 typhus epidemic.[2, 3] Regular DDT dusting in prisons, hospitals, reception centres and repatriation camps had been applied to more than two million persons. From 1946 to 1950, the Allied occupation forces in Japan also employed DDT, although less intensively. After the outbreak of the Korean war, the use of DDT again became general. However, as early as 1948 the Japanese Press had reported certain failures in reception centres, where persons treated with DDT were not freed from lice. The observations made in the field were again confirmed in the laboratory. Lice from clothing already treated with DDT were more resistant than those which had been bred in the laboratory away from the insecticide. Thus the effectiveness of DDT delousing became doubtful, and the question arose as to whether it might not be preferable to give up the regular use of DDT and to employ it, with its full effectiveness, only in the event of some emergency—the threat of an epidemic for example.

The resistance of lice continued to increase. In 1948, lice which had been exposed to certain DDT concentrations under particular conditions died within 42-54 hours. But in 1951, under the same conditions, they survived until the fourth or sixth day. Furthermore, although at the outset about 30 g of

[1] Hurlbut, H. S., Altman, R. M. & Nibley, C. (1952) *Science*, 115, 11

[2] Kitakao, M. (1952) *Jap. J. med. Sci.*, 5, 75

[3] Hurlbut, H. S., Peffly, R. L. & Salah, A. A. (1954) *Amer. J. trop. Med.*, 3, 922

DDT were sufficient to delouse a person, a few years later three times this amount was necessary.

Similar information came from Egypt, where DDT dusting had been applied every 3-5 weeks as a routine public health measure. In 1953, a resistant louse strain was reported from the Cairo region.

WHO survey

In view of the growing threat represented by this resistance, WHO undertook, in 1953, a world-wide survey of insecticide-resistance in lice in order to assess the extent of the danger. Up to 1956, 51 national health administrations had agreed to take part in this survey, which was to be carried out according to a uniform method with the aid of an experimental kit supplied by WHO. The results of tests conducted in 37 countries, including more than 180 localities, have just been analysed in an article published in the *Bulletin of the World Health Organization*.[4]

The test consisted in determining the mortality of lice (*Pediculus humanus corporis* de G.) which had been placed for 24 hours, at 25° C in darkness, on a piece of cloth treated with insecticide powder in the following concentrations: DDT, 0.1%, 0.5%, 1%, 5%; BHC (gamma isomer) 0.25% and 0.5%; synergized pyrethrins, 0.02% and 0.04%. Two samples of 10 or 20 lice, recently taken from human beings, were to be tested on three successive days (making a total of six replicates) at each concentration. Analysis of the results from this test indicated that a mortality of 90% was representative of a normally susceptible strain, while 83% already indicated significant resistance and 72% typical resistance, such as was reported from Cairo in 1953.

Results of the survey

Despite reservations which must be made regarding the extrapolation of results based only on a few samples to an entire country—reservations which will be discussed later—certain general features emerge from this survey.

In Europe, there is no marked resistance, with the exception of a sample from Portalegre (Portugal).

In the Eastern Mediterranean countries, susceptibility is distinctly lower than in Europe or the adjacent Asian countries. Three out of five samples in Jordan, coming from refugee camps whose occupants had been subjected to regular dusting by staff of the United Nations Relief and Works Agency, showed a mortality of less than 72%. The same is true of most of the Egyptian strains and of several Turkish and Syrian strains. One sample from the Gaza region even had a mortality as low as 33%.

Among the Asian countries, Afghanistan, India, and Pakistan report mortality figures which do not indicate any abnormal resistance. In Iran, on the contrary, resistance was found in all localities where DDT had been used. From Teheran the exceptional case was reported of a man who regularly supplied lice for studies on the transmission of disease by these insects, and who had been using DDT periodically. In this case, the mortality of the lice had fallen to 21%.

In Japan, all the samples undergoing the test were resistant, the Tokyo strains being in no way inferior to those from Korea. A Kobe strain, bred since 1954 in the presence of DDT, gave in 1956, after 10 generations, a mortality of 21%, comparable to that of lice from the subject in Teheran mentioned above.

In French West Africa—Sudan, Haute-Volta, Niger—where dusting has been rare, susceptibility remained normal. On the other hand, at St Louis (Senegal) and Conakry (French Guinea) resistance was high. In Northern Nigeria, where dusting, if not regularly carried out everywhere, at least takes place occasionally, susceptibility seems to be decreasing and gradually approaching the level shown by the Cairo strains. Two samples from the African townships of Queenstown and Eskeaton, Union of South Africa, with mortalities of 18% and 14%

[4] Wright, J. W. & Brown, A. W. A. (1957) *Bull. Wld Hlth Org.*, 16, 9

respectively, were the most resistant strains encountered in the survey, even surpassing those from Korea in this respect.

The results from the Americas were of considerable interest. The susceptibility of lice in Mexico City, where there is regular dusting, was equal to that of lice from Guatemala City, where there is none. In Peru it was found that in the town of Arequipa, where DDT was only used occasionally, susceptibility was normal. However, in treated towns, such as Corao and Cuzco, susceptibility had diminished, mortality figures being 44% and 65% respectively. In Bolivia, no samples were tested but it was noted that each successive dusting was effective for a shorter period.

Considered as a whole the figures for DDT-resistance show that the DDT-susceptibility of lice in regularly dusted areas is considerably less than in areas never or rarely dusted.

Susceptibility to other insecticides

Susceptibility to gamma-BHC remained intact in most of the samples examined, although there were several exceptions to this rule, particularly in the case of samples from Japan. It would seem that the high resistance to this substance there might be attributed to the general use of BHC in Japan since 1952. The pyrethrins did not seem to have given rise to any resistance, except in Japan where certain strains showed a mortality of only about 10%.

Variability of resistance

Mention has already been made of the danger of generalizing and extrapolating

PERCENTAGE MORTALITY OF BODY LICE OBTAINED IN SOUTH-EAST FRANCE *

	Number of samples	Number of lice	Percentage mortality			
			24 hours	48 hours	72 hours	96 hours
DDT at 0.1 %						
susceptible	95	838	84	100		
sub-susceptible	18	240	14	36	100	
sub-resistant	3	78	0	3	33	100
relatively resistant [a]	1	27	0	0	8	31
resistant [b]	1	56	0	0	10	10
γ-BHC at 0.25 %						
susceptible	73	896	92	100		
sub-susceptible [c]	1	20	0	70	100	
sub-resistant [a]	1	12	0	16	33	100
Pyrethrins at 0.02 %						
susceptible	635	844	96	100		
sub-susceptible [d]	1	12	0	33	100	

* Data obtained from Nicoli, R. M. & Sautet, J. (1955) *Monogr. Inst. Nat. Hyg.*, 8
[a] North African at Marseilles
[b] Frenchman from the Upper Var
[c] Malagasy at Marseilles
[d] Negro from Oran

from local results to the regional or national levels, while at the same time failing to recognize individual variations. Two examples will suffice to make the problem clear: The first concerns the survey carried out in Greece, the results of which might have led to the belief that resistance in lice was unknown there. More careful examination, however, showed that 2 out of 21 of the samples collected actually showed a degree of resistance, in one case corresponding to a mortality of 31%. The second example is taken from an intensive study by Nicoli & Sautet.[5] These authors tested more than 100 strains of lice collected from transients in a night-shelter at Marseilles. They examined the strains from each individual separately and came to the conclusion that resistance can vary from one individual to another. They isolated and bred strains which were DDT-susceptible (by far the most numerous), sub-susceptible, sub-resistant, and relatively resistant, as well as one strain which appeared completely resistant but whose larvae were not viable. In the case of this latter strain, no mortality attributable to DDT was observed after 120 hours (see Table). Referring to the possible consequences arising from the existence of particularly resistant strains Nicoli & Sautet conclude " the existence of strains of lice with a lower susceptibility to halogenated contact insecticides combined with the sometimes rapid movements of their human transient hosts, represent a potential threat to the population, since nobody knows whether the lice which today are harmless may not tomorrow be dangerous."

[5] Nicoli, R. M. & Sautet, J. (1955) *Monogr. Inst. Nat. Hyg.*, **8**

Stability of rabies vaccines

"Because of the different climatic conditions found throughout the world, it is of the utmost importance for every country to determine the stability of the vaccines produced and used. Where facilities for adequate and continuous refrigeration are available, properly produced nervous tissue vaccines should remain stable for several months. Expiration dating, however, should be based on results of a series of potency tests for duration of antigenicity. Where there is a decentralization of vaccine treatment centres, and vaccines may not be properly refrigerated during transit or storage, it is especially important to determine by means of potency tests the maximum permissible expiratory date for the vaccines. When such a date is reached it is best to destroy the vaccine if unused, rather than perform another potency test for the purpose of extending the expiratory date, because experience has shown that vaccine suspensions may unpredictably and suddenly lose their potency upon prolonged standing.

Phenolized vaccine which has inadvertently been frozen should be discarded.

Since the efficacy of living chicken-embryo vaccines depends upon a critical amount of live virus being present at the time of inoculation, such vaccines should be kept dried and refrigerated until used: after reconstitution they should be used immediately."

From the Third Report of the WHO Expert Committee on Rabies, *Wld Hlth Org. techn. Rep. Ser.* 1957, **128**

DEVELOPMENT OF MATERNAL AND CHILD WELFARE IN TURKEY[1]

Infant mortality and the protection of child health are matters of capital importance for Turkey, a country that is still sadly underpopulated and lacking in the requisite manpower fully to exploit its national riches. Year after year, the relatively high mortality among infants and, to a certain extent, too, among pre-school age children, takes a serious toll of the country's potentially productive population.

Recognition of this situation led the Turkish Government to seek the help of the World Health Organization, through its Regional Office for Europe, as a first step towards setting up comprehensive maternal and child welfare services throughout the country. This preliminary phase began in September 1954, when a WHO team arrived in Turkey to set up maternal and child health demonstration centres in Ankara and Izmir; in all, four were established.

It rapidly became apparent, however, that extension of the programme to provincial health centres, as originally planned, would require the prior setting up of an administrative service, staffed by senior officers capable of co-ordinating and integrating the various elements working in the maternal and child health field, as well as the provision of more and more trained staff at all levels.

Large-scale health services plan

From these beginnings, Turkey has developed an all-embracing plan, of a magnitude that may have repercussions on the whole economy of the country. A series of health, social and educational measures, entailing far-reaching re-organization and extension of the existing public health services, is envisaged. Eventually, there will be health centres in every principal town throughout the country, together with some 6500 additional "health stations", to bring the public health services within the compass of all sections of the population.

The health centres—which had already been planned prior to the developments in maternal and child welfare—are intended to take care of both the curative and the preventive aspects of public health and it is now proposed to attach to them pre- and post-natal clinics.

The provision of staff forms a major part of this ambitious programme, since it is obvious that large numbers of additional doctors, nurses, midwives and auxiliary personnel will have to be recruited. Experience has shown that, despite adequately trained staff, preventive services are often unsatisfactory where effective direction and supervision are lacking. Hence, the availability of senior staff is also considered a prerequisite for success.

It is therefore planned to supplement the existing permanent establishment of public health directors and medical officers by appointing 32 regional consultants in paediatrics and obstetrics from among the regular hospital staffs, to act as technical advisers to the Ministry of Health, and by setting up a permanent inspectorate composed of about 400 persons or one to every 25 basic staff members, to be responsible for supervising and guiding the work of the maternal and child health nurses and midwives.

Training Programmes

A large training programme is envisaged to provide the thousand or so physicians that are needed (two per district) with the requisite training in child welfare, and to extend the rural midwife service by forming a pool of nurse-midwife assistants, numbering some 10 000, or one to every 2500 inhabitants. It is planned, in addition, to make use of girls from the villages, acting in a voluntary

[1] This note is based on information contained in an article by Dr Karabuda, Under-Secretary of State, Ministry of Health, Ankara, and Dr Humann, WHO Team Leader, MCH Project in Turkey, *Courrier* (International Children's Centre), 1956, 6, 511-514.

capacity, to help in the work of the nurse-midwife assistants after some local training. This last measure is expected to prove of value in awakening public interest in health matters and in promoting recruitment of staff. Special training will also be provided for senior medical staff, i.e., public health directors, medical officers and regional consultants, as well as for executive medical officers to take charge of the district health centres.

It is recognized, too, that the work of the public health nurse, to be fully effective from the standpoint of both preventive medicine and maternal and child health, must be fitted within the general framework of public health measures. The functions of the existing public health agents, numbering some 4000 in all, are to be broadened so as to ensure close co-operation, and record services will be set up as a means of obtaining a general picture of environmental conditions.

In every case, training programmes will be realistic and adapted to the actual functions to be performed, so as to extract the maximum practical value from the instruction given. In addition to the training facilities already existing, all of which—medical faculties, specialized institutes and specialized services alike—will be mobilized in this effort, a special school is to be set up in Ankara during 1957, for the training of inspectors and tutors in preparation for the subsequent expansion of training at the lower levels. A special committee has already been established for the co-ordination of the training programme. The demonstration centres set up with the help of WHO will be focal points for much of this training work and WHO staff are also directly assisting the section that is responsible for the recruitment and training of all nursing staff.

At the national level, the plan provides for the setting up of : (*a*) a special section within the Ministry of Health, to deal with the overall direction and co-ordination of child welfare; (*b*) a higher technical advisory board, composed of senior public health officials and paediatricians; and (*c*) a national association of private child welfare societies, whose help is needed if the programme is to be carried to a successful conclusion.

WHO will be taking an active part in the programme by providing technical guidance and assistance. UNICEF will also be contributing, in the form of supplies of equipment and material. A start on the work has already been made and the whole programme is expected to be completed in some 15 years.

Epidemiological and Statistical Information

MORTALITY FROM MULTIPLE SCLEROSIS

A recent number of the WHO *Epidemiological and Vital Statistics Report* [1] is devoted to mortality from multiple sclerosis in thirteen European and seven non-European countries. The information given is of particular interest as this is the first occasion on which international statistics on this subject have been collected.

It is common knowledge that in spite of research for more than a century, the etiology of multiple sclerosis still cannot be precisely defined. At the outset, this illness was considered as a kind of medical curiosity but it is now recognized as a disease which is more common than was supposed.

[1] *Epidem. vital Statist. Rep.* 1956, **9**, 595-608 (No. 11). This number also contains recent morbidity and mortality figures relating to yellow fever, relapsing fever and smallpox.

MORTALITY FROM MULTIPLE SCLEROSIS IN 1952-54, BY SEX AND AGE

Rates per 100 000 population (yearly average)

Country		All ages	Age groups in years								
			— 10	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80 & +
AMERICA											
Canada	M	1.2	—	0.1	0.3	1.4	2.0	3.2	3.6	4.6	4.1
	F	1.1	—	0.1	0.6	1.1	2.9	1.9	3.0	2.3	2.7
United States: All races	M	0.9	—	—	0.2	0.7	1.4	1.9	2.6	3.3	3.1
	F	1.0	—	0.1	0.4	1.0	1.8	2.2	2.2	2.3	2.2
White	M	0.9	—	—	0.2	0.7	1.5	2.0	2.6	3.4	3.3
	F	1.0	—	—	0.3	1.0	2.0	2.3	2.3	2.4	2.4
Non-white	M	0.4	—	—	0.3	0.4	0.7	1.0	1.9	1.1	0.5
	F	0.4	—	0.1	0.6	0.7	0.7	0.9	0.7	0.8	—
ASIA											
Japan	M	0.1	—	—	—	0.1	0.1	0.1	0.4	0.6	0.2
	F	0.1	—	—	—	—	0.1	0.1	0.2	0.2	0.9
EUROPE											
Denmark	M	2.1	—	—	0.6	2.8	4.6	3.2	6.0	2.9	1.2
	F	2.2	—	—	0.7	3.0	4.8	5.9	3.3	1.6	0.9
Finland	M	0.8	—	—	0.5	0.7	1.0	2.4	3.5	4.2	2.7
	F	0.6	—	0.1	0.4	0.3	1.4	1.4	1.8	1.5	—
France	M	3.1	0.1	0.1	0.3	0.8	1.5	2.6	7.5	23.8	57.5
	F	3.1	—	—	0.4	1.1	1.9	2.8	4.6	13.3	40.3
Germany, Federal Rep.	M	1.8	—	—	0.5	1.8	3.0	3.9	4.2	4.2	10.2
	F	2.5	—	0.1	0.8	2.7	4.1	5.0	4.4	3.9	8.2
Ireland	M	2.6	0.1	0.1	0.6	2.6	7.8	6.5	5.7	3.4	1.7
	F	2.5	—	—	0.8	3.9	4.0	6.9	3.7	6.2	7.7
Italy	M	0.6	—	—	0.1	0.4	1.1	1.4	2.4	2.7	1.1
	F	0.6	—	—	0.3	0.8	1.1	1.5	1.7	1.3	0.7
Netherlands	M	1.7	0.1	0.1	0.5	2.1	4.3	3.8	3.6	3.6	0.5
	F	2.1	—	—	1.0	2.7	4.5	5.0	5.1	2.7	1.1
Norway	M	1.8	—	—	0.6	1.4	3.2	3.7	5.1	4.2	2.8
	F	1.6	—	—	0.6	1.5	3.5	3.2	1.9	4.7	—
Sweden	M	0.9	—	—	0.4	0.9	1.9	2.6	1.6	0.6	—
	F	1.2	—	0.1	0.9	1.1	2.6	2.2	2.2	1.0	1.1
Switzerland	M	1.7	0.1	—	0.6	1.4	2.7	4.0	5.2	3.4	1.3
	F	3.0	—	—	1.1	3.1	4.4	7.9	5.8	5.3	0.8
United Kingdom:											
England and Wales	M	1.4	—	—	0.4	1.6	2.3	3.2	3.4	2.0	1.5
	F	2.1	—	0.1	0.8	2.3	4.0	4.8	3.4	2.2	1.1
Scotland	M	3.0	—	—	0.7	3.0	6.1	6.9	7.7	4.4	5.0
	F	3.4	—	0.1	1.1	4.4	6.8	7.6	6.2	4.1	1.6
Northern Ireland	M	2.7	—	—	0.7	4.2	4.4	8.5	8.0	3.3	—
	F	3.8	—	0.3	2.0	5.7	9.7	8.3	5.9	2.6	—
OCEANIA											
Australia	M	0.5	—	—	0.2	0.3	0.9	1.1	1.7	2.1	3.3
	F	0.9	—	0.1	0.4	0.7	1.3	2.4	2.3	1.8	1.7
New Zealand	M	1.1	—	—	0.2	1.0	0.6	5.5	3.9	2.4	—
	F	1.3	—	—	0.2	1.7	1.9	3.5	3.0	2.8	2.3

Multiple sclerosis may affect any part of the central nervous system. It is sometimes classified as a disease of the medulla because many of its symptoms develop as a result of medullar lesions. The disease may appear at any age, but it is most common in the 20-40 age groups. Its evolution is slow but progressive; sufferers may live from 10 to 15 years.

In the 18 countries for which figures are published in the Report in question, mortality from multiple sclerosis represents from 0.1% to 0.3% of general mortality, both during recent years and in the period preceding the Second World War. The highest death rates are noted in Scotland, France and Northern Ireland. In the period 1952-1954 mortality rates per 100 000 persons varied, with respect to males, from 0.1 in Japan to 3.1 in France and, with respect to females, from 0.1 in Japan to 3.8 in Northern Ireland (see Table). In general, the rate is a little higher for women than for men.

Notes and News

International transfer of dogs and cats

The WHO Expert Committee on Rabies considered it useful, in its third report,[1] to repeat, with slight modifications, the general recommendations concerning the international transfer of dogs and cats made in its second report, " without attempting to cover the many different situations faced by countries throughout the world ".

1. Countries now free of rabies should continue either to prohibit the importation of dogs and cats, or to subject them to a prolonged period of quarantine, preferably six months, at the port of entry.

2. Where strict quarantine measures are impracticable, such as in countries with extensive land borders and in which rabies is already present in domestic or wild animals, the following procedures are recommended:

(*a*) Animals (dogs and cats) should be vaccinated more than one month but within 12 months before departure with inactivated vaccine or Kelev strain vaccine, or within 36 months before departure with Flury strain vaccine, the vaccine having previously passed satisfactory potency tests.

Certificates signed by the appropriate veterinary authorities in the country of origin should accompany each animal. (The third report of the committee gives a suggested certificate.) Where any doubt exists with respect to the potency of the vaccine used in the animals' country of origin, the animals should be considered as unvaccinated.

(b) Unvaccinated animals should be vaccinated upon arrival and quarantined for not less than 45 days, or where quarantine measures are impossible to apply the animal should be kept under surveillance for a similar period and not allowed to run at large.

3. In countries free of rabies but where prolonged quarantine measures cannot be invoked, 2(*a*) and 2(*b*) may be applied. This recommendation should not be construed, however, as discouraging more stringent measures such as longer quarantine or restraint periods upon entry, where applicable.

International drug control

Two analgesic drugs of morphine-like character have now been brought under international control following action taken by the World Health Organization in conformity with the provisions of the Protocol of 19 November 1948. This protocol is specifically concerned with the control of those drugs which are outside the scope of the earlier Narcotics Convention of 1931. Article I of

[1] *Wld Hlth Org. Techn. Rep. Ser.*, 1957, **128**

the 1948 Protocol requires States who are Parties to notify the Secretary-General of the United Nations of drugs which may be harmful and which do not come within the scope of the 1931 Convention. In the case of the two drugs which have now been brought under international control—

α-1-methyl-3-ethyl-4-phenyl-4-propionoxypiperidine and its salts;

1-[2-(*p*-aminophenyl)-ethyl]-4-phenylpiperidine-4-carboxylic acid ethyl ester and its salts

—the original notification was submitted by the Government of the United States of America. This notification was referred by the Secretary-General of the United Nations to the World Health Organization, and, on 22 November 1956, the Director-General of the World Health Organization informed the Secretary-General that both drugs were capable of producing addiction and WHO " has therefore decided that they shall fall under the regime laid down in the 1931 Convention for the drugs specified in Article 1, Paragraph 2, Group I of that Convention ". It will be recalled that the 1931 Convention limits the manufacture and regulates the distribution of narcotic drugs.

The final action in this matter was taken by the Secretary-General of the United Nations, who, on 20 December 1956, transmitted the World Health Organization decision to all States party to the 1948 Protocol.

International biological standardization

The international standardization of pertussis vaccine was successfully completed in 1956. This achievement was based on three main results of the efforts made during the post-war years. Large-scale field trials proved that different preparations of pertussis vaccine possessed a different immunizing potency, and that the best preparations had a high protective power in children. Laboratory tests carried out with the same preparations showed that the degree of protection afforded by a pertussis vaccine can be predicted by assaying its potency against a standard vaccine in mice. Finally, the proposed international standard vaccine was shown to be a highly stable preparation.

Against the background of this success, the Expert Committee on Biological Standardization of the World Health Organization examined the work in progress with other vaccines.[1] For some, such as smallpox vaccine and poliomyelitis vaccine, a lack of stability had so far prevented the establishment of an international standard preparation. Fortunately, in 1956, very stable freeze-dried preparations of smallpox vaccine have become available, and since the correlation between laboratory assays and the efficacy in vaccination of humans has also been established for this vaccine, the date of its international standardization cannot befar off.

For some other vaccines no direct solution of the standardization problem is available at the present stage. These include typhoid and cholera vaccines. Though we can be reasonably certain that some preparations of these vaccines confer a good measure of protection, the laboratory assays so far developed do not permit us to predict this prophylactic effect in humans with sufficient confidence.

The fact, however, that international standardization of vaccines is now being realistically undertaken marks the progress in this unspectacular but important task of providing units of measurement for complicated biologicals.

At the same time, the Expert Committee has initiated its programme of antivenin standardization. Emphasizing that the principles of standardizing antivenins are analogous to those of standardizing bacterial antitoxins, the Committee now plans to go ahead with the collection of sufficient quantities of potent antivenin sera for each of the main genera of snakes, to serve as international standards. When the extensive studies of the methods of assay used by antivenin-producing institutes all over the world, and of the suitability of various preparations, have been completed this international programme is expected. to yield the same measure of

[1] An account of recent work carried out by this Expert Committee will be found in its Tenth Report which is now in process of publication.

success as has the standardization of antitoxins.

While proceeding with these complicated undertakings the Committee marked another aspect which portends the future of biological standardization, namely the fact that progress in this field will eventually make the international biological standards superfluous. It decided that twelve international standard preparations, most of which had been established prior to the last war, had ceased to be international biological standards because the active principles in these preparations could now be recognized as pure chemical substances for which biological standards were no longer needed. The preparations in question include the vitamins A, B, C and E., oestrone, androsterone, progesterone and chloramphenicol. The remaining stocks of the international standards for these substances have been offered for possible inclusion, on the advice of the Expert Committee on the International Pharmacopoeia, in the Collection of Authentic Chemical Substances, which will be established at Stockholm under the auspices of WHO.

Controlling drug addiction in Japan

The pernicious effects resulting from misuse of " wake-amine " in Japan were examined in an article published in a recent issue of the *Chronicle*.[1] Since then a further report on the question has been submitted to the WHO Expert Committee on Addiction-Producing Drugs. This traces the development of the wake-amine problem in Japan during the year 1955. The statistics which form part of Dr T. Masaki's report reveal that the total number of offenders arrested during the year diminished (55 664 persons in 1954 as against 32 143 in 1955), and that the percentage of addicts among the offenders showed a gradual decrease. Also of interest was the fact that the number of Japanese adolescents using this drug had shown a sharp fall. Dr Masaki concluded his notes by putting forward the view that whereas the misuse of wake-amine had formerly been spread throughout the whole community it now seemed to be generally confined to certain groups such as prostitutes and hooligans.

At its meeting held in Geneva between 18 and 24 October 1956, the Expert Committee on Addiction-Producing Drugs took note of Dr Masaki's report. Although the situation remained serious in Japan, it was also evident that through effective enforcement of control measures in the year 1955 improvements had resulted in the general situation.

[1] See *Chron. Wld Hlth Org.*, 1956, 10, 243

Three WHO Member States resume active participation

The People's Republics of Albania, Bulgaria and Poland have informed Dr M. G. Candau, WHO Director-General, of the decision of their respective governments to resume active participation in the World Health Organization as from 1 January 1957. Albania ceased active membership in February 1950, Bulgaria in November 1949, and Poland in August 1950.

The decisions follow a resolution, adopted last May by the Ninth World Health Assembly, designed to facilitate the resumption by the nine " inactive " Members of the Organization of their rights and obligations in WHO, and the settlement of arrears of contributions of those Members.

Non-Governmental Organizations

Three non-governmental organizations were admitted into official relationship with WHO during the Nineteenth Session of the Executive Board.[1]

The organizations are: the International Diabetes Federation, the International Confederation of Midwives, and the World Federation of Societies of Anaesthesiologists.

The first of these—the International Diabetes Federation—was founded in 1950 on the initiative of the co-discoverer of insulin, Dr C. H. Best of Canada. The stated

[1] This brings the total number of non-governmental organizations in official relations with WHO up to 43. For details of the framework of collaboration between WHO and the non-governmental organizations see *Chron. Wld Hlth Org.*, 1956, 10, 410.

objectives of the Federation are to further the acquisition and dissemination of useful and accurate information regarding diabetes mellitus and to undertake such activities as will improve the physical and socio-economic welfare of persons afflicted with the disorder. Membership of the organization consists of 21 national diabetes associations from a like number of countries. As part of its work programme the Federation is interested in holding post-graduate courses for young doctors, and in taking a census of diabetics throughout the world, two activities in which WHO may co-operate.

The International Confederation of Midwives groups together 27 affiliated national groups and associations of midwives in 23 different countries. Total membership of these groups and associations comes to just under 112 000. Among the primary purposes of the Confederation are the furtherance of knowledge and good understanding of all problems relating to reproduction and childbirth, and assisting national groups to work together for the purposes of promoting family health, improving the standard of maternity care and advancing the training and professional status of midwives.

Of specific interest, with reference to WHO's work, is the Confederation's expressed desire to advance the standard of public health, particularly in regard to maternity and child care, through greater cooperation between midwives and nurse-midwives throughout the world.

The World Federation of Societies of Anaesthesiologists is a comparatively new body, having been established in 1955. The 30 founder member societies, each from a different country, have over 4000 members. The Federation's object is to make available the highest standards of anaesthesia to all peoples throughout the world. More particularly, it wishes to assist and encourage the formation of national societies of anaesthesiologists, and to recommend desirable standards of training for them. Other functions include the provision of information regarding opportunities for post-graduate training and research and the encouragement of research into all aspects of anaesthesiology. The purposes of the Federation, particularly those concerned with the provision of educational facilities and raising standards of knowledge and practice with a view to reducing the serious anaesthetic mortality in many countries, are closely allied to those of WHO in this field.

New Assistant Director-General of WHO

Dr P. M. Kaul, formerly Director of WHO's Division of External Relations and Technical Assistance, has been appointed Assistant Director-General in charge of the Department of Advisory Services. Dr Kaul replaces Dr Victor Sutter who left the World Health Organization in order to accept an appointment as Minister of Public Health and Social Assistance in his own country, El Salvador.

Dr Kaul was born in India in 1906. He took the degree of M.B.B.S. at the King Edward Medical College, Lahore. In London he obtained the Diploma in Public Health from the Royal Institute of Public Health, and became a Member of the Royal College of Physicians, London, after a period of post-graduate study at Guy's Hospital and Medical School, and King's College (London).

From 1934 to 1945 Dr Kaul served in the Indian Medical Service, latterly with the rank of Acting Colonel. Afterwards he became Additional Deputy Public Health Commissioner with the Government of India and remained in this post until he joined WHO's Singapore Epidemiological Intelligence Station as Medical Officer in 1948.

For some years Dr Kaul served as Director of the WHO Liaison Office with the United Nations in New York before returning to Geneva Headquarters.

Pan American Sanitary Bureau appointment

The appointment of Dr Myron E. Wegman of the USA as Secretary General of the Pan American Sanitary Bureau (Regional Office of the World Health Organization) has

● As the awareness of positive health increases among the population of the South East Asia Region, governments are being subjected to more and more pressure to provide medical and public health facilities even at the sacrifice of some quality.

● THERE is danger that governments, encouraged by offers of outside assistance, will undertake more activities than the country can absorb, especially in view of the lack of trained personnel.

● THE available manpower has to be utilized to the maximum; this will entail the use of auxiliary personnel in spheres which in developed countries are entrusted only to people of professional status.

● THE term "public health" should be applied in its broadest sense, and attempts should be made to reorientate the clinical approach towards community health. In some instances this might mean granting fellowships to teachers in clinical subjects in order that they may study the total health approach.

● THE balance between the curative and preventive aspects of the total health picture has to be carefully preserved if the service as a whole is to be successful.

● COMMUNICABLE disease control still requires substantial assistance from outside agencies, and increasing emphasis should be placed on the integration of mass campaigns into the permanent health services of the countries.

● THE establishment of maternal and child health centres catering only to the needs of mothers and children should be discouraged; such centres should take on the role of health centres.

These are some of the conclusions which the WHO Regional Committee for South East Asia outlined in its report, after its ninth session which took place in New Delhi at the end of last year. An account of the work of the Committee appeared in the November 1956 issue of the Chronicle.

recently been announced by Dr Fred L. Soper, Director of the Bureau.

In accordance with constitutional requirements, the appointment received the prior approval of the Organization's seven-member Executive Committee, which represents the twenty-one American Republics, Members of the Pan American Sanitary Organization. The Committee includes representatives of Bolivia, Colombia, Cuba, Guatemala, Nicaragua, Paraguay and Peru.

In the position of Secretary General, Dr Wegman will be the Bureau's chief planning officer, responsible for co-ordinating the programme planning of the Organization in the light of the health needs of the member countries. Since 1952 Dr Wegman has been Chief of the Bureau's Division of Education and Training, working with medical schools, public health schools and other educational institutions, a post which has brought him into close association with all the governments and public health administrations in the Americas. He has recently conducted seminars on preventive medicine in which all medical schools in Latin America participated, and is now completing a comprehensive survey of paediatric education throughout the Continent.

Dr Wegman is a graduate of the College of the City of New York. He took his medical degree at Yale University and his public health degree at Johns Hopkins. Subsequently he was on the staff of the Maryland and New York City Health Departments. Before going to Louisiana State University Dr Wegman was successively a member of the faculty at the medical schools of Yale University, Johns Hopkins University, the School of Tropical Medicine in Puerto Rico, Cornell and Columbia Universities.

Death of Professor Charles-Edward Amory Winslow

On 8 January 1957 the death occurred at his home in New Haven, Connecticut, of Professor Winslow, a great supporter of international collaboration in the health field. His death will be deeply regretted by many public health workers, as well as by his

friends, students and colleagues throughout the world.

Professor Winslow was long connected with the work of international organizations. In 1921 he served as General Medical Director of the League of Red Cross Societies in Geneva; between 1927 and 1930 as Expert Assessor, Health Committee of the League of Nations; and in 1951 as a consultant to the World Health Organization. During this latter period Professor Winslow prepared, at the request of WHO, the well-known monograph *The Cost of Sickness and the Price of Health.* In 1952 he was awarded the Léon Bernard Medal by the Fifth World Health Assembly. This award took its place alongside the Sedgwick Memorial Medal, the W. Paul Anderson Medal, and the Lasker and Prentiss Awards.

Born on 4 February 1877 in the United States of America, Professor Winslow took a B.S. from the Massachusetts Institute of Technology. He commenced his work in public health in 1898, when he became an Assistant Health Officer in Montclair, New Jersey. In later years Professor Winslow held many important public health posts in the USA. Among the more prominent were: Curator of Public Health at the American Museum of Natural History, New York; Professor (and subsequently Professor Emeritus) at the Yale University Medical School; and Chairman of the New York State Commission on Ventilation.

Executive Board session

Some 60 agenda items were dealt with by the WHO Executive Board in the course of its nineteenth session, which took place in Geneva between 15 and 30 January. The session was presided over by Professor G. A. Canaperia with Dr R. Pharaon as Vice-Chairman. In the absence of the other Vice-Chairman, Dr C. K. Lakshmanan, his alternate, Dr T. C. Puri, was nominated Acting Vice-Chairman. The Board elected Dr E. Suarez and Dr B. M Clark as Rapporteurs.

Among the more important decisions reached by the Board were:

Programme and Budget Estimates for 1958

The Board considered that the Director-General's programme was well conceived within the scope of the Organization's long-range functions and objectives, although there might be a re-assessment of the activities in terms of urgent priorities. It recommended that the Tenth World Health Assembly approve a basic effective working budget of $11 761 350 and a supplemental budget for an amount not to exceed $1 871 000.

Appointment of Regional Directors

The Board appointed Dr Paul J. J. van de Calseyde as Regional Director for Europe from 1 February 1957, and Dr Abdol Hossein Taba as Regional Director for the Eastern Mediterranean from 1 September 1957. Before making this latter appointment the Board paid tribute to Dr Ali Tewfik Shousha, the present Eastern Mediterranean Regional Director, who has been associated with the work of WHO since the early days of the Interim Commission and has held office as Regional Director for the past eight years. He will be retiring at the end of August. Dr Shousha was Chairman of the first three sessions of the Executive Board in 1948-49.

The new European Regional Director, Dr van de Calseyde was born in Ghent in 1903 and obtained his medical degrees at the University of Ghent in 1929. In 1930 he was appointed Medical Officer of Health at the Ministry of Postal Services and Transport, and in 1935 he entered the Ministry of Health. He was appointed Director-General of Public Health in 1945. Dr van de Calseyde is also a member of the WHO Expert Advisory Panel on Venereal Infections and Treponematoses and has represented Belgium for many years at the World Health Assembly and on the Regional Committee for Europe.

Dr A. H. Taba, who will be taking over as Eastern Mediterranean Regional Director on 1 September 1957 and who is at present Deputy Director of the Regional Office, was born in 1912 in Teheran and studied medicine at the Universities of Birmingham and

London. He was Surgeon-in-charge of the Iranian Railways Health Department, a member of the Iranian Parliament, of the Supreme Health Council in Teheran, and of the Central Committee of the Imperial Health Organization of Iran. Dr Taba represented his country at the Third World Health Assembly.

Peaceful uses of atomic energy

WHO's collaboration with the United Nations and other organizations and agencies concerned with the peaceful uses of atomic energy will be carried a stage further by reason of the Board's decision to authorize the Director-General to initiate discussions with the Preparatory Commission of the International Atomic Energy Agency with a view to concluding an agreement between the two Organizations on the basis of the agreements entered into between WHO and the specialized agencies.

Eleventh World Health Assembly

A recommendation was made by the Board to the Tenth Health Assembly that the Eleventh World Health Assembly should be held in the United States of America provided that an invitation was received from that country by the time of the forthcoming Health Assembly.

Action was also taken by the Board on the question of a special ceremony to mark the tenth anniversary of the Organization. It was decided to recommend that the ceremony should take the form of a two-day special session which should be held in the same place as, and immediately preceding, the Eleventh World Health Assembly.

The Board noted with appreciation the Darling Foundation Committee's decision that the medal and prize for the fifth award should be presented to Dr P. F. Russell, and requested the Director-General to arrange for this presentation by the President of the Tenth World Health Assembly.

Expert Committee Reports

The Board authorized the publication of ten WHO Expert Committee reports. They will be issued later in the WHO *Technical Report Series*. Reports to be published are: Joint FAO/WHO Expert Committee on Food Additives (First Report); Joint FAO/WHO Expert Committee on Milk Hygiene (First Report); Expert Committee on Rabies (Third Report); Expert Committee on Insecticides (Seventh Report); Expert Committee on Rheumatic Diseases (Second Report); Expert Committee on Organization of Medical Care (First Report); Expert Committee on Malaria (Sixth Report); Expert Committee on Health Laboratory Methods (First Report); Expert Committee on Addiction-Producing Drugs (Seventh Report); Expert Committee on Biological Standardization (Tenth Report).

Future work

In one of the Board's final meetings decisions were taken to appoint representatives of the Board at the Tenth World Health Assembly and arrangements were made for the Board's next meeting. Professor G. A. Canaperia and Mr. W. H. Boucher were appointed to represent the Board at the forthcoming Assembly. It was agreed that the twentieth session of the Board would commence in Geneva on Monday, 27 May.

Review of WHO Publications

Meat Hygiene. By various authors. Geneva, 1957. (*World Health Organization : Monograph Series*, No. 33), 527 pages, 106 illustrations, 2 colour plates, bibliography, index.
Price : £2 10s., $10.00, Sw. fr. 30.—

This comprehensive and well-illustrated book contains contributions from meat hygiene experts in many parts of the world. It is not intended as a universal guide to meat hygiene; its aim is to throw light on recent advances and problems in the many and diverse aspects of this vast subject for the benefit of the responsible authorities and students in public health and veterinary science. The table of contents is as follows : The epidemiology of meat-borne diseases *(C. E. Dolman)*; Transport, ante-mortem care, and inspection of animals intended for slaughter *(M. J. J. Houthuis)*; Hygienic construction and technical organization of slaughterhouses *(G. Scaccia Scarafoni)*; Methods of stunning, slaughter, and collection of blood *(T. Blom)*; Electrical stunning *(Phyllis G. Croft)*; the municipal abattoir *(R. Benoit)*; General principles for post-mortem inspection and hygienic judgement of meat *(H. Thornton)*; Post-mortem inspection and judgement of tuberculous carcasses *(H. Drieux)*; Post-mortem inspection and judgement of parasite-infected carcasses *(G. Schmid)*; Application of bacteriological and biochemical tests in the hygienic judgement of meat and meat products *(A. Jepsen)*; Hygienic aspects of meat processing *(F. Schönberg)*; Disposal and reclamation of by-products *(V. E. Albertsen)*; Hygienic control of meat in markets and in food-serving establishments *(S. O. Koch)*; Training of meat inspectors *(H. Thornton)*; Survey of meat-hygiene practices in Europe *(R. I. Hood & H. H. Johansen)*; Meat-hygiene problems in tropical areas *(M. M. Kaplan)*. In addition to a select bibliography, sixteen annexes are included. These cover such subjects as annual meat consumption in various countries; the transport of slaughter animals by road, rail, sea and air; the design of abattoirs; bacterial food poisoning and its investigation; meat inspection regulations; and the findings of a WHO/FAO seminar on meat hygiene, which was held in Copenhagen in 1954.

Influenza

" According to reports received up to 14 February, no evidence on any important influenza epidemic has been observed in Europe or in North America. In the United States the presence of an Influenza A virus, closely related to the Ann Arbor/56 strain, has been noted in connexion with a localized outbreak in an airforce base in Colorado."

. . . from the WHO *Weekly Epidemiological Record*, 1957, **32**, 96